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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/478,144	01/05/2000	Christopher M Herring	P04659	1299
34456	7590	04/02/2004	EXAMINER	
TOLER & LARSON & ABEL L.L.P. 5000 PLAZA ON THE LAKE STE 265 AUSTIN, TX 78746			HYUN, SOON D	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/478,144

Applicant(s)

HERRING ET AL.

Examiner

Soon-Dong Hyun

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,7-12 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 3, 7-12, and 17-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The indicated allowability of claims 7-12 and 17 is withdrawn in view of the previously cited reference to Haartsen. Rejections based on the cited reference(s) follow.

Claim Objections

2. Claim 18 is objected to because of the following informalities.

In line 1, "16" should be changed to -- 17 --, because claim 16 was canceled.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 3, 7-12, 17-19, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 7, line 5, it is not clear what is meant by "at least", i.e., as long as each hopping frequency is spaced at 1.063 MHz (a fixed value) apart, more than 75 hopping frequencies could not be maintained (see FIG. 7) in the band between 2401.122 MHz to 2479.813 MHz.

In claim 17, lines 5-6, it is not clear whether each time slot in a frame has a different carrier frequency, i.e., it is not clear whether 16 carrier frequency carriers are allocated to one frame having 16 time slots.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2663

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2, 3, 7-10, and 17-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (USP 6,393,007).

Regarding claims 7, and 17-27, Haartsen discloses a TDMA/TDD communication system and method for a base station (2) and a plurality of remote radio communication units (6, 7) using a time slot hopping scheme, wherein the system provides radio communications in the ISM (Industrial Scientific and Medical) band of 2.4 GHz to 2.4835 GHz comprising 79 radio frequency channels in the ISM band and a hop rate of 100 hops per second, see col. 14, lines 27-37. Haartsen further discloses that the base station and each remote radio communication unit (a cordless personal access device) comprises a transceiver 8 (an RF sub-module), see col. 6, lines 45-47. Haartsen does not explicitly teach a processor, but the processor is inherently required to provide time slot and frame timing (FIG. 4) to the transceiver such that the 79 frequency channels and the hop rate are maintained.

However, Haartsen differs from the present application in that the present application has 75 hopping frequencies which are spaced 1.063 MHz in the spectrum of 2401.122 MHz to 2479.813 MHz, 16 time slots in each ten-millisecond frame, and the frame changes its carrier after a predetermined number of consecutive frames (i.e., hopping rate is 50 or 25), while the Haartsen has 79 hopping frequencies which are spaced 1.0 MHz in the spectrum of 2400 MHz to 2483.5 MHz, 24 time slots in each ten-millisecond frame, and the frame changes its carrier after one frame time (i.e., hopping rate 100).

It will be apparent to those of skill in the art that the use of other number of carrier frequencies or hopping rates depends on available frequency band. In addition, no unexpected results can be seen from the use of such frequency carriers, hopping rates, and time slots.

Therefore, it would have been obvious to one having ordinary skill in the art to use 75 hopping frequencies which are spaced 1.063 MHz in the spectrum of 2401.122 MHz to 2479.813 MHz, 16 time slots in each ten-millisecond frame, and the frame changes its carrier after a predetermined number of consecutive frames (i.e., hopping rate is 50 or 25).

Regarding claim 2, Haartsen further discloses that the system supports concurrently voice and data communication, see col. 8, lines 50-59.

Regarding claim 8, Haartsen further discloses that unequal amount of time slots are allocated between voice and data communications, see FIG. 4.

Regarding claim 9, Haartsen differs in that the present application assigns time slot numbers 1-3, 9-11 for data communications and 4-6, 12-14 for voice communications, while Haartsen assigns 2-4, 14-16 for voice communications and 9-12, 21-24 for data communications, see FIG. 4.

It will be apparent to those of skill in the art that the use of different slot numbers for data and voice communications. In addition, no unexpected results can be seen from the different assigning.

Therefore, it would have been obvious to one having ordinary skill in the art to assign time slot numbers 1-3, 9-11 for data communications and 4-6, 12-14 for voice communications.

Regarding claim 10, it would have been obvious to one having ordinary skill in the art to allocate a time period to program a carrier frequency in the RF module of a FHSS system.

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (U.S. Patent No. 6,393,007) in view of Fazel (U.S. Patent No. 6,275,506).

Haartsen does not explicitly teach the format of each time slot. Fazel teaches that the FH-SS (Frequency Hopping-Spread Spectrum) concept of Haartsen could be applied the DECT standard, see col. 2, line 21-col. 3, line 9, i.e., the time slot format of the DECT standard could be used with the FH-SS scheme. Those of skill in the art would be motivated to incorporate the time slot format of the DECT standard into Haartsen, because Haartsen and the DECT standard support a TDMA/TDD radio communication system and the time slot format for the DECT standard is well-known in the art of TDMA/TDD radio communications, wherein each time slot used in the DECT standard comprises a 32 bit preamble for synchronization, a 64 bit A-field for signaling and a B-field comprising 320 bit (for information) and 4 bit for CRC, see specification of the present application page 3, lines 10-15.

Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the time slot format of the DECT into Haartsen.

Art Unit: 2663

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soon-Dong Hyun whose telephone number is (703) 305-4550. The examiner can normally be reached on Monday-Friday from 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen, can be reached on (703) 308-5340.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

10. Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450

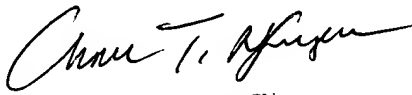
Alexandria, VA 22313-1450

Or faxed to: 703-872-9306 for formal communications intended for entry with a label of

"OFFICIAL" and for informal or draft communications with a label of "PROPOSED" or "DRAFT" (attn: Art Unit 2663, Soon-Dong Hyun).

ly
S. Hyun

03/29/2004


CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600